Ionospheric Modeling and Precision Positioning Global Navigation Satellite System (GNSS)

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Abstract
In ionosphere, the total electron content (TEC) contributes a significant role in determining the scintillation. Ionospheric scintillation can affect severely in satellite-based navigation and communication systems. Thus, the study of TEC of ionosphere is very crucial. The correlation between TEN and temperature in different weather and time has been presented in this paper. The TEC data was taken from the global positioning system (GPS) receiver at University Malaysia Pahang, Malaysia (120’24.7388’E and 36’14.5310’N). TEC data was analyzed by the SPSS software and the results have shown that during dry weather, the TEC is highly correlated with temperature as compared to the rainy weather.

Keywords: Total electron content (TEC), Ionospheric scintillation, GNSS.